

Amendments to the Claims:

This listing of claims will replace all prior versions and listings of claims in the application.

Listing of Claims:

1-24. (canceled)

25. (currently amended) A conjugate polypeptide formed from two or more amino acid sequences that comprise:

- (a) a first gp41 polypeptide having an amino acid sequence corresponding to a polypeptide comprising the amino acid sequence of SEQ ID NO:2 or SEQ ID NO:3 and is capable of forming a stable coiled-coil structure; and
- (b) a second gp41 polypeptide having an amino acid sequence corresponding to a polypeptide comprising the amino acid sequence of SEQ ID NO:5 or SEQ ID NO:6 and is capable of forming an α -amphipathic α helical segment;

wherein at least three polypeptides of (a) and (b) are alternately linked to one another via a bond, such as a peptide bond (amide linkage) to form the conjugate polypeptide or at least two polypeptides of (a) and (b) are linked by an amino acid linking sequence consisting of about 2 to about 25 amino acids to form the conjugate polypeptides.

26. (previously presented) The conjugate of claim 25, wherein:

said first gp41 polypeptide comprises about at least 28 amino acids of the following sequence:

ARQLLSGIVQQQNNLLRAIEAQQHLLQLTVWGIKQLQARILAVEERYLKDQQLLGI
(SEQ. ID NO: 1), or multimers thereof; and

said second gp41 polypeptide comprises about at least 24 amino acids of the following sequence:

WNNMTWMEWDREINNYTSLIHSLIEESQNQQEKNEQELLELDKWASLWNWFNI
TNW (SEQ ID NO:4), or multimers thereof.

27. (previously presented) The conjugate of claim 25, wherein:

said first gp41 polypeptide is selected from the group consisting of SEQ ID NO: 1, SEQ ID NO: 2, SEQ ID NO: 3, and one of SEQ ID NO: 9 through SEQ ID NO: 40, and wherein the peptide can be optionally coupled to a larger carrier protein, or optionally include a terminal protecting group at the N- and/or C- termini; and

said second gp41 polypeptide is selected from the group consisting of SEQ ID NO: 4, SEQ ID NO: 5, SEQ ID NO: 6, and one of SEQ ID NO: 41 through SEQ ID NO: 74, and wherein the peptide can be optionally coupled to a larger carrier protein, or optionally include a terminal protecting group at the N- and/or C- termini.

28. (currently amended) A composition comprising a conjugate of claim 25, and a physiologically acceptable carrier.

29.-56.(cancelled)

57. (currently amended) A method of raising a ~~broadly~~ neutralizing antibody response to HIV comprising:

administering to a mammal a composition including at least one conjugate polypeptide of claim 25;

and detecting the presence of a neutralizing antibody response to HIV.

58. (previously presented) The method of claim 57, wherein said conjugate polypeptide comprises an amino acid linking sequence having the amino acid sequence of (GGGGS)₃(SEQ ID NO:7).

59. (previously presented) The method of claim 57, wherein said conjugate polypeptide comprises a) a first gp41 polypeptide having the amino acid sequence of SEQ ID NO:2 or 3 and b) a second gp41 polypeptide having the amino acid sequence of SEQ ID NO:5 or SEQ ID NO:6.

60. (previously presented) The method of claim 59, wherein the sequence of

(a) is linked to a sequence of (b) which is linked to a second sequence of (a).

61. (previously presented) The method of claim 59, wherein a sequence of (b) is linked to a sequence of (a) which is linked to a second sequence of (b).

62. (previously presented) The method of claim 59, wherein said one or more sequences is one of (a) and (b), and wherein said first or second gp41 polypeptides are coupled to a larger carrier protein.

63. (currently amended) A conjugate polypeptide formed from two or more amino acid sequences that comprise:

- (a) a first naturally occurring gp41 polypeptide having an amino acid sequence corresponding to a polypeptide comprising the amino acid sequence of SEQ ID NO:2 or SEQ ID NO:3 ; and
- (b) a second naturally occurring gp41 polypeptide having an amino acid sequence corresponding to a polypeptide comprising the amino acid sequence of SEQ ID NO:5 or SEQ ID NO:6;

wherein

at least three polypeptides of (a) and (b) are alternately linked to one another via a bond, such as a peptide bond (amide linkage) to form the conjugate polypeptide, or at least two polypeptides of (a) and (b) are linked by an amino acid linking sequence consisting of about 2 to about 25 amino acids to form the conjugate polypeptide.

64. (previously presented) The conjugate polypeptide of claim 25 or claim 63, wherein the first polypeptide comprises the amino acid sequence of SEQ ID NO:3 and the second polypeptide comprises the amino acid sequence of SEQ ID NO:6.

65. (previously presented) The conjugate polypeptide of claim 25 or claim 63, wherein the first polypeptide comprises the amino acid sequence of SEQ ID NO:2 and the second polypeptide comprises the amino acid sequence of SEQ ID NO:5.

66. (previously presented) The conjugate polypeptide of claim 25 or claim 63, wherein the sequence of (a) is linked to a sequence of (b) which is linked to a second sequence of (a).

67. (previously presented) The conjugate polypeptide of claim 25 or claim 63, wherein a sequence of (b) is linked to a sequence of (a) which is linked to a second sequence of (b).

68. (previously presented) The conjugate polypeptide of claim 25 or claim 63, wherein said first and second polypeptides are (a) and (b), and wherein said at least one of said first and second polypeptides are coupled to a larger carrier protein.